MassDEP eNewsletter
The Massachusetts Department of Environmental Protection
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Message from Commissioner Golledge:

Welcome to MassDEP's new Environmental e-Newsletter!

I am pleased to present the first edition of the MassDEP Environmental e-Newsletter and invite you to subscribe for future editions. This e-Newsletter and subsequent quarterly editions will allow us to share with you highlights of our important work, as well as connect you to information about new regulations, upcoming public hearings, and the latest environmental enforcement actions. In order to get future editions of the MassDEP Environmental e-Newsletter, please click here to subscribe.

In this edition (see articles below), we focus on MassDEP's first-in-the-nation drinking water and cleanup standard for the chemical perchlorate. There is also a story on MassDEP's implementation of protective water use standards within the stressed Ipswich River Watershed. Another article outlines how MassDEP's mercury emission reduction efforts have resulted in lower mercury levels in native fish species.

I encourage you to enjoy these informative articles, and to let us know your thoughts about this e-Newsletter and what kind of stories you would like to see in future editions. Please also pass this e-Newsletter to a friend who might enjoy it.

In this issue

Thank you - Commissioner Robert W. Golledge, Jr.

Seeking to Protect Water Supplies, MassDEP Proposes First-In-The-Nation Standards of 2 ppb for the Chemical Perchlorate

Strict Limit Also Applies to Cleanup of Contaminated Locations

Hearings are set to begin this month seeking public comment on what will be the nation's first drinking water and waste site cleanup standards for the chemical perchlorate. The Massachusetts Department of Environmental Protection (MassDEP) announced the proposed standards of 2 ppb on March 14, 2006.

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Following the announcement by Environmental Affairs Secretary Stephen R. Pritchard and MassDEP Commissioner Robert W. Golledge Jr., the proposed regulations were met with praise from many environmental and public health organizations, elected officials, and municipal officers for being highly protective and adopting the most-stringent standards yet seen across the country.

Secretary Pritchard and Commissioner Golledge stated that the proposed standards are protective of public health, particularly for sensitive populations such as pregnant women, nursing mothers, infants and individuals with low levels of thyroid hormones. Perchlorate has been found to interfere with thyroid function, which could lead to impaired human development and metabolism.

"Perchlorate is an emerging contaminant that has raised a red flag for environmental agencies and public health officials across the country," Secretary Pritchard said. "These proposed standards ensure that the water is safe to drink for all citizens of the Commonwealth, requiring regular monitoring for perchlorate into the future."

"Testing results from studies across the country have found perchlorate in many things, including water, food and milk," Commissioner Golledge said. "A perchlorate standard of 2 ppb provides the best overall protection of public health, while setting a cleanup standard that is feasible and attainable."

Perchlorate Found in Numerous Sources

Perchlorate is a chemical that can be found in blasting agents, fireworks, military munitions, and other manufacturing processes, and can be generated in small amounts within existing water treatment processes.

The proposed regulations require parties responsible for perchlorate contamination to clean up the contamination and for all drinking water supplies to contain no more than 2 ppb of perchlorate. The regulations also require regular testing for perchlorate in all public water systems.

MassDEP has proposed the 2 ppb standard based on a thorough review of the scientific data available on perchlorate, including analysis performed by independent scientists at the National Academy of Sciences. In setting the proposed perchlorate standards, MassDEP used long-standing protocols previously utilized in the setting of over 200 chemical standards for drinking water and for the cleanup of groundwater at waste sites.

No federal standards regulating perchlorate levels in drinking water currently exist. The MassDEP standards are 12 times stricter than the "preliminary cleanup goal" of 24.5 ppb released by the U.S. Environmental Protection Agency last year.

Perchlorate was first detected in 2002 in the aquifer under the Massachusetts Military Reservation on Cape Cod, when it was found to be moving toward drinking water wells in the town of Bourne. In 2003, MassDEP set an advisory guideline of 1 ppb for the presence of perchlorate in drinking water supplies, while further research was conducted on the chemical and whether it was prevalent in the state's water sources.

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In 2004, MassDEP required all drinking water systems – approximately 800 statewide – to test for the presence of perchlorate in their drinking water sources. Test results indicated perchlorate above the interim guidance level at sites in Boxborough, Boxford, Chesterfield, Hadley, Millbury, Southbridge, Tewksbury, Westford, Westport and Williamstown. Those sites were required to take specific actions to address the contamination, which included disconnecting the contaminated source from the system, using bottled water, or constructing a treatment system.

Public Hearings Begin April 10 in Bourne
MassDEP will be seeking public comment on the proposed regulations between April 10, 2006 and May 12, 2006. Comments may be sent to: David Terry, MassDEP Drinking Water Program, 1 Winter Street, Sixth Floor, Boston, MA 02108.

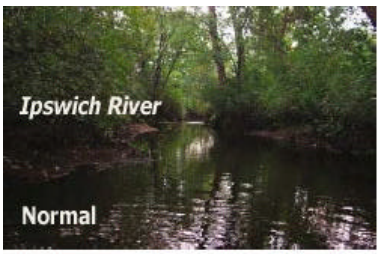
Public hearings will also be held on the following dates:

- April 10, 2006 – 5 p.m., Peebles Elementary School gymnasium, 70 Trowbridge Rd., Bourne.
- April 11, 2006 – 3 p.m., MassDEP Boston Office, 1 Winter St., 2nd floor conference room, Boston.
- April 19, 2006 – 4 p.m., MassDEP Northeast Regional Office, 205B Lowell St., Wilmington.
- April 20, 2006 – 4 p.m., MassDEP Southeast Regional Office, 20 Riverside Dr., Lakeville.
- April 25, 2006 – 3 p.m., MassDEP Western Regional Office, 436 Dwight St., Springfield.
- April 27, 2006 – 4 p.m., MassDEP Central Regional Office, 627 Main St., Worcester.

Full copies of the proposed regulations are available on MassDEP's web site at:
http://mass.gov/dep/water/drinking/percinfo.htm

MassDEP Reaffirms Conservation Measures As Part of Final Decision in Ipswich River Water Management Act Appeals

Separate WMA Appeals Settlement with Danvers and Middleton Also Finalized



MassDEP previous decisions to implement conservation requirements and limit residential water use for the communities within the highly stressed Ipswich River watershed have been reaffirmed by a final decision issued by the MassDEP commissioner and a separate settlement reached with two of the impacted communities.

Settlement Reached with Danvers and Middleton
The settlement, signed March 29, 2006, resolved the appeals of the towns of Danvers and Middleton, and involved the Ipswich River Watershed Association and MassDEP. The agreement provides greater environmental protection for the river and ensures that the towns will be able to meet their needs for a safe and sustainable water supply, while accommodating new development.

"This settlement strikes the right balance between competing uses of the water – it protects the environment, while allowing continued economic growth in the

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Commonwealth," MassDEP Commissioner Robert W. Golledge Jr. said. "The agreement provides each community with the ability to deliver a clean and reliable source of drinking water, while ensuring that the water will be used wisely to protect and possibly restore one of the state's most severely stressed rivers."

The settlement includes new conditions applied to their water withdrawal permit, which offers the towns greater flexibility in managing their supplies, while requiring strict water conservation and demand mitigation measures that are needed to avoid damage to the river. The permit takes effect immediately.

Among the permit conditions are:

- Danvers and Middleton may pump up to 3.72 million gallons a day from their reservoirs and wells, but must shut off the wells, rely upon water stored in the reservoirs, and restrict outdoor water use during low-flow periods.
- Private wells in Middleton are subject to the same restrictions as apply to public water supply customers.
- The towns will implement an innovative "water usage mitigation program" to offset water demand from new or expanded development.
- Performance standards apply to residential water use, unmetered water, and summer use; MassDEP will consider the towns' progress towards meeting those standards before taking any enforcement action.

MassDEP Adopts ALJ Decision For Hamilton, Wenham and Topsfield

On March 27, 2006, Commissioner Golledge also adopted the recommended decision of an administrative magistrate, saying that the proposed Water Management Act permit conditions – such as those included for Hamilton, Topsfield and Wenham – are necessary and appropriate to begin to restore adequate flows in the river.

Commissioner Golledge specifically stated that MassDEP may include conditions in the permits establishing conservation requirements to alleviate the flow situation in the Ipswich River during the summer months.

"Conditions to reduce water use, even where withdrawals are already below authorized volumes and the safe yield of the basin remains uncertain, are justified to prevent 'no flow' conditions in the Ipswich River," Commissioner Golledge wrote.

The Commissioner also noted the "commendable efforts" of the towns to manage their supplies – or more accurately to manage their customers, by limiting water use such as residential lawn watering – more efficiently.

One issue was whether permit conditions may affect withdrawal volumes that were registered in the late 1980s when the statute was passed. While there are important distinctions between registration and permits under the Water Management Act, registered withdrawals are not beyond the scope of MassDEP authority. Particularly where safe yield appears to be compromised and conditions on permits are insufficient to sustain flows, Commissioner Golledge concluded that "the Department has not only the authority but the obligation to act."

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Commissioner Golledge stated that MassDEP anticipates including conditions on registrations as well to further promote conservation. Under the statute, MassDEP may condition registrations to specify conservation measures to be instituted by the registrant. Implementation of conservation measures should lower actual withdrawals without lowering the volume authorized under a registration statement. Under the statute, the Water Resources Commission has the responsibility for the development of conservation guidelines and its Water Conservation Standards would provide appropriate measures for registrations at renewal in 2008.

Commissioner Golledge also expressed concern about the time and expense of litigation of Water Management Act permits and suggested that MassDEP consider issuing draft permits for public comment prior to issuance and any appeal proceedings.

Although Massachusetts is relatively rich in groundwater and surface water supplies, many communities are facing water use restrictions and seasonal low-flow in their rivers and streams. MassDEP regulates water withdrawals under the Water Management Act, legislation passed in 1985 to manage ground and surface water in a single hydrologic system and to balance the competing needs of water users. Most water supplies and other large water users are covered by Water Management Act permits. Water users at the time the Act was passed could register their water use. Permits are required for new or increased withdrawals. Permits are subject to review every five years.

The amount of water withdrawn within a basin may not exceed the basin's safe yield. The Water Management Act prohibits the issuance of new permits if the combined volume of existing, permitted and proposed withdrawals will exceed safe yield and it allows permit applicants to purchase unused volumes held by registrants.

Ipswich River Faces Severe Low-Flow Conditions

For many years, the Ipswich River has experienced severe low-flow conditions in the summer time, at times running dry for almost half of its 45-mile length. When permits initially issued in 1991 were reviewed, it was clear that modifications were necessary to include more stringent conditions to address low-flow problems. MassDEP commissioned the United States Geological Survey (USGS) to study both hydrologic and ecologic aspects of the river to better understand the cause of the low flows and evaluate management alternatives. In 2003, MassDEP issued modified permits to municipal water suppliers within the Ipswich basin.

The permits for public water suppliers in the Ipswich basin contained water conservation requirements, including a limit on residential water use of 65 gallons per person per day, a limit on unaccounted for water of 10 percent or less of overall water use, and a cap on summer water withdrawals. Some permit restrictions were linked to specific stream flows to address the summer shortfalls, and allow alternate approaches to restrictions on summer water use.

Most municipal suppliers in the Ipswich basin – Hamilton, Wenham, Topsfield, Danvers, Middleton, Lynnfield, Lynn, North Reading, Peabody, Salem, Beverly and Wilmington – appealed their modified permits, claiming that the conditions were too stringent. The Ipswich River Watershed Association, Essex County Greenbelt Association, and a 10-citizen group intervened to become part of the case, and the Massachusetts Audubon Society participated in the case as well.

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The appeals have been under ongoing review before an administrative magistrate at the state Division of Administrative Law Appeals, where hearings on appeals of MassDEP permits are now held. In late January, Administrative Magistrate James Rooney issued a ruling in the first three appeals – Topsfield, Hamilton and Wenham. Rooney's recommended decision upheld the MassDEP conditions as initially proposed, with small modifications to the water restriction notice in each permit.

As per the standard process for permit appeals, this recommendation was sent to Commissioner Golledge for a final decision. On March 27, 2006, Commissioner Golledge adopted the recommended decision and two prior rulings on legal issues that had been raised by the parties. In his decision, he stated that the stringent Water Management Act permit conditions may even affect a water supplier's access to "registered" water volumes and conservation measures are appropriately part of the registration process as well as permitting.

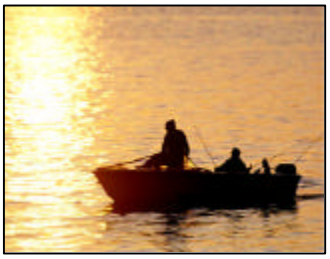
Finally, difficulties in determining "safe yield" – the amount of water that can safely be withdrawn from the basin – have contributed to uncertainty about the amount of water available for withdrawal. Research into this issue is underway, and the safe yield for the Ipswich River basin will be evaluated after adoption of a revised methodology.

Copies of the recommended and final decisions on this case can be found on the MassDEP website at: www.mass.gov/dep/water/resources/permits.htm

Freshwater Fish in Mass. Lakes Show Significant Reductions in Mercury

Improvements Correlate to State's Zero Mercury Strategy

Five years of testing on largemouth bass and yellow perch in over a dozen lakes and ponds by the Massachusetts Department of Environmental Protection (MassDEP) have revealed encouraging news: the level of mercury in these species – although still too high – is declining, and this drop correlates with tighter regulatory controls on mercury pollution adopted by Massachusetts in recent years.



A potent toxin, mercury adversely affects people and wildlife, in particular the neurological system, kidneys, immune system and cardiovascular system. The brain and developing neurological system of the fetus and children are particularly sensitive to mercury and can be damaged by fairly low levels of exposure.

Since 1999, the MassDEP Office of Research and Standards, with technical and analytical support from the Bureau of Resource Protection's Watershed Group and the William X. Wall Experimental Station, has been testing the same subset of 17 lakes. The data reveal substantial reductions of mercury in fish tissue statewide, and the most significant reductions in the fish tissue were found in an area where the greatest reduction in mercury emissions occurred - the northeast region of Massachusetts.

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Detailed results of this work will be published shortly and the Office of Research and Standards will continue monitoring efforts to assess longer-term trends in mercury levels. However, the results of those tests for both species are summarized here:

- **YELLOW PERCH**: Nine of the lakes sampled for yellow perch were in the northeastern section of Massachusetts and in eight of these lakes, the drop of mercury concentrations in yellow perch averaged 32.4%, and the average for other remaining lakes statewide showed a drop of 15%.

- **LARGEMOUTH BASS:** Eleven of the lakes sampled for largemouth bass were in the northeast region and mercury levels from seven of these decreased an average of 24%, and the decline over the other remaining lakes statewide was 19%.

Large Decreases Seen Within Mercury 'Hotspots'
Mercury deposition modeling performed in 1998 demonstrated that the northeast region of Massachusetts was a mercury deposition "hotspot," with the highest rate of mercury atmospheric deposition in New England. Since that time, mercury emissions statewide have been reduced by about 70%, and by about 87% from sources located in the "hotspot" area. These reductions occurred as a result of new emission controls that were put in place at several trash incinerators in the mid-1990s, which, at the time, were the most protective emission limits in the country. In addition, some of the sources of mercury emissions in the northeast part of the state closed, including one trash incinerator and a medical waste incinerator.

Based on recent data from US Centers for Disease Control and Prevention, several hundred thousand newborns each year in this country are at-risk of mercury toxicity because of their mother's exposure to mercury. This equates to over 10,000 newborns at risk each year in the Commonwealth.

Once released into the environment, mercury persists and does not break down into harmless components like many other pollutants. It also bio-accumulates, or becomes concentrated, in fish tissue at levels up to a million times higher than in water. Although mercury is a natural element, the amount of this toxin circulating in portions of the biosphere is much higher than it was 100 years ago. Most human exposure to mercury is largely attributable to the consumption of contaminated fish.

To address mercury pollution, Massachusetts and other New England States and the Eastern Canadian Provinces developed a regional strategy: the New England Governors and Eastern Canadian Premiers Mercury Action Plan targeting mercury pollution. The goals of the plan are to reduce New England and Eastern Canadian mercury emissions by 75% as of 2010, with a long-term goal of virtual elimination. To further the goals of the regional plan, Massachusetts adopted its own multi-agency Zero Mercury Strategy in 2000. Under these strategies, Massachusetts has developed and is implementing one of the strongest programs to reduce mercury pollution and monitor environmental results in the nation, including strict but achievable control requirements on mercury releases from coal-fired utilities, trash and medical incinerators, and dental offices.

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Long-term Monitoring of Native Fish Species
While regulations covering the control of mercury have grown stronger, the testing of lakes in the state has also evolved. Massachusetts has monitored fish contaminants since 1984; the primary goal of much of the early work was simply to identify fish populations that might pose unacceptable health risks. Since most sampling sites were not revisited, a long-term record of fish mercury conditions was not established and trends in mercury levels could not be evaluated.

Starting in the autumn of 1994, a more rigorous and comprehensive approach to the study of mercury in fish in Massachusetts was implemented

The objective of this current work by MassDEP's Office of Research and Standards has been to establish a long-term monitoring network that will measure variation and long-term trends in mercury levels in fish. Data from a subset of lakes located in proximity to a number of historically large sources of mercury emissions in a high mercury deposition area has provided welcome and unexpected good news about the rapidity with which these valuable aquatic resources respond to major reductions in mercury inputs to the environment.

MassDEP will continue to monitor mercury concentrations from these water bodies to assess the environmental results of mercury reduction efforts. These efforts include limits on emissions from the Commonwealth's coal-fired utilities that take effect in 2008, as well as programs to reduce mercury pollution from consumer and industrial products and from dental offices that are currently underway in Massachusetts and the northeastern U.S. and Canada. MassDEP is also working to address the contribution of upwind, out-of-state sources to mercury deposition in Massachusetts through additional monitoring and modeling.

While this recent news is encouraging, the sobering facts are these: based on data from MassDEP's fish monitoring program, fish consumption advisories have been issued for over 100 specific water bodies in the state since the 1980s, and overall, about 50% of all tested water bodies have one or more species of fish with mercury concentrations that necessitate fish consumption advisories for the general population, including the sensitive subgroups women of childbearing age, pregnant women, nursing mothers and children.

Although substantial progress has been made, there is clearly further work to be done. Massachusetts, and the region as a whole, remain committed to continued implementation of mercury reduction efforts under the Massachusetts Zero Mercury Strategy and the New England Governors-Eastern Canadian Premiers Mercury Action Plan.

For more information see:

Toxic Effects of Mercury **- http://mass.gov/dep/toxics/stypes/hgres.htm**
Public Health Fish Consumption Advisory - **http://db.state.ma.us/dph/fishadvisory/**

To Improve Services, MassDEP To Finalize Regional Office Changes

21 Communities to be Re-assigned by May 1, 2006; Wilmington Office Re-opening a Success; New Cape Cod Satellite Office Expected to Open by Summer

MassDEP is changing its regional office structure in order to facilitate public access to MassDEP's services and to provide better environmental protection.

The changes are the recent re-opening of MassDEP's Northeast Regional Office in Wilmington, which had been closed for more than two years during the state's budget crisis, the opening of a satellite office on Cape Cod this summer, and shifting services for 21 communities to new MassDEP regional offices.

Adjustments to Regional Boundaries

The Towns of Athol, Hardwick, Petersham, Royalston, and Warren – along with all their environmental files, wetlands cases and landfill issues – were re-assigned from MassDEP's Central Regional Office (CERO) in Worcester to the Western Regional Office (WERO) in Springfield on February 1, 2006.

Effective May 1, 2006, 16 more cities and towns will be covered by a different MassDEP regional office. These are the upcoming regional boundary moves:

- Moving from the Northeast Regional Office (NERO) in Wilmington to the Southeast Regional Office (SERO) in Lakeville will be: Braintree, Canton, Cohasset, Hingham, Holbrook, Hull, Randolph, Norwood, Walpole, and Weymouth.
- Moving from NERO to CERO will be: Medfield, Millis, and Norfolk.
- Moving from SERO to CERO will be: Franklin.
- Moving from CERO to NERO will be: Tyngsborough, and Westford.

As is the case with any positive change, the transition itself comes with its share of challenges, including staff and project reassignment, record and file relocation, facility requirements, and communication. Where appropriate, some ongoing projects may remain with the current region until completed. If there are any questions regarding the regional boundary shifts during this transition period, please contact the appropriate regional office; contact information can be obtained at the following web link: http://www.mass.gov/dep/about/organization/depofflo.htm

Northeast Regional Office Re-opens in Wilmington

One move that has already been completed is the re-opening of a Northeast Regional Office (NERO) – now located at 205B Lowell Street in Wilmington. For more than two years, NERO was located at MassDEP's downtown Boston headquarters. The move back to Wilmington has been well received by the communities in the Northeast part of the state. Approximately 200 people attended an Open House on December 15, 2005 to tour the new facility.

According to NERO Director Richard Chalpin, the opening of the Wilmington office allows MassDEP staff to provide better outreach and compliance assistance to the cities and towns it serves.

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He said the new location helps MassDEP provide optimal environmental services and offer more convenient access to seminars on such topics as Title 5, Perchlorate, and Wetlands. The Salem records and file review office is also now closed, and all file reviews for the Northeast Region are taking place in the Wilmington facility.

New Cape Cod Satellite Office Planned

A last move, expected to be final by July 1, 2006, is the opening of a new satellite office in the Hyannis area of Cape Cod. The Cape Cod Satellite Office will make MassDEP more accessible to people living on the Cape and Islands who would normally have to travel to the Southeast Regional Office in Lakeville, enhance MassDEP's delivery of services to Cape Cod communities, and also decrease MassDEP's response time in the case of environmental emergencies.

Many of the same services provided in the Lakeville location will take place in the Cape Cod Satellite Office, including file review, permitting and technical assistance, and emergency response. In addition to a full-time Office Manager, MassDEP expects that on any given day, 5-10 employees, representing various MassDEP programs, will be working out of the Cape office.

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